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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/764,175
Filing Date: January 23, 2004
Appellant(s): RAJKOTIA, PURVA R.

John T. Mockler
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 30 August 2007 appealing from the Office action mailed 09 February 2007

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

This appeal involves claims 1-12, 19, 21-25 and 27-30.

Claims 13-18 are allowed.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,418,322	KIM ET AL.	7-2002
2004/0029604	RAAF	2-2004
20020090947	BROOKS ET AL.	7-2002
20020068586	CHUN ET AL.	6-2002

"Applicant's Admitted Prior Art"

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1-3, 7-9, and 13-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art in view of KIM et al. (US 6,418,322 B1).

Regarding claim 1, For use in a wireless network, Applicant's description of the Prior Art, discloses a base station capable of releasing a call between said base station and a mobile station during a call set-up procedure, said base station comprising:

a preamble frame detector capable of detecting preamble frames transmitted to said base

station by said mobile station during said call set-up procedure; and said base station transmitting null frames during said call set-up procedure (Fig. 3; page 17, paragraph [0043] of the specification; during call set up the Base Station 101 sends a series of null frames to the mobile station 111 on a first frequency channel and after the mobile station receives two good null frames the mobile station starts sending preamble frames which the Base Station receives or detects, the transmissions of the null and preamble frames between the Base Station and mobile station occurs simultaneously).

But, Applicant's Admission of the Prior Art fails to particularly disclose wherein the base station comprises a transmit power controller capable of adjusting a power level of null frames transmitted by the base station.

However, adjusting the power level of frames transmitted by a base station is well known in the art and Kim is evidence of the fact. Kim, in an analogous field of invention, teaches a method of forward power control in a cellular mobile telecommunication system having a base station and a mobile station in which the base station changes its parameters of the forward power control in order to maintain the quality of the forward link (abstract).

The mobile station receives forward frames from a base station and periodically sends to the base station a power measurement report (PMRM) regarding the forward frames (col. 5, lines 11-37; i.e., null frames). When the mobile station does not receive a forward signal (i.e., forward/null frames) the mobile station is unable to transmit the PMRM to the base station, and when the base station does not receive any PMRM from the mobile station within a predetermined period, then the base station changes its parameter to increase the digital gain to increase the transmission power so that the mobile station can receive the forward frames (i.e., adjusting power of frames transmitted by the base station) and transmit the PMRM. Therefore, as a result of improving the quality of the forward link by the increase in the digital gain and consequently transmission power, the mobile station is able to receive two forward frames consecutively and restart transmission of the PMRM (col. 6, lines 26-49).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the prior art to provide a base station with a transmit power controller capable of adjusting a power level of frames transmitted by said base station, as suggested by Kim, in order to improve or maintain the quality of the forward link (i.e., forward or null frames) so that the mobile station is able to receive two good frames consecutively from the base station (col. 6, lines 29-36, 45-49) and start transmission of the preamble frames.

Regarding claim 2, the combination of Applicant's description of prior art and Kim disclose the base station as set forth in Claim 1, Kim discloses wherein said preamble frame detector of said base station is capable of detecting at least one missing preamble frame from said mobile station; and wherein in response to said detection of said at least one missing preamble frame from said mobile station, said transmit power controller increases a power level

of null frames transmitted by said base station (col. 5, lines 11-37; col. 6, lines 26-49; the base station receives the PMRMs from the mobile station (fairly characterized as preamble frames since the MS transmit them in response to the reception of forward/null frames transmitted by the BS) and when it detect the failure of the reception of a PMRM within a predetermined time (i.e., missing preamble), the base station changes its parameters to increase the digital gain to increase the transmission power of the forward frames so that the mobile station can receive the forward frames).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the prior art to include in the base station the features of wherein the preamble frame detector of said base station is capable of detecting at least one missing preamble frame from said mobile station; and wherein in response to said detection of said at least one missing preamble frame from said mobile station, said transmit power controller increases a power level of null frames transmitted by said base station, as suggested by Kim, in order to improve the quality of the forward link (i.e., forward or null frames) so that the mobile station is able to receive two good frames consecutively from the base station (col. 6, lines 29-36, 45-49) and start transmission of the preamble frames.

Regarding claim 3, the combination of Applicant's description of the prior art and Kim disclose, the base station as set forth in Claim 2, Kim discloses wherein said transmit power controller increases said power level of null frames by a step size having a configurable value (col. 6, lines 29-36; the transmission power is increased by a "second big up delta").

Regarding claim 7, Applicant's description of the prior art discloses a wireless network comprising a plurality of base stations, each of said plurality of base stations capable of releasing

a call between said base station and a mobile station during a call set-up procedure, wherein said each base station comprises:

a preamble frame detector capable of detecting preamble frames transmitted to said base station by said mobile station during said call set-up procedure; and said base station transmitting null frames during said call set-up procedure (Fig. 3; page 17, paragraph [0043] of the specification; during call set up the Base Station 101 sends a series of null frames to the mobile station 111 on a first frequency channel and after the mobile station receives two good null frames the mobile station starts sending preamble frames which the Base Station receives or detects, the transmissions of the null and preamble frames between the Base Station and mobile station occurs simultaneously).

But, Applicant's Admission of the Prior Art fails to particularly disclose wherein the base station comprises a transmit power controller capable of adjusting a power level of null frames transmitted by the base station.

However, adjusting the power level of frames transmitted by a base station is well known in the art and Kim is evidence of the fact. Kim, in an analogous field of invention, teaches a method of forward power control in a cellular mobile telecommunication system having a base station and a mobile station in which the base station changes its parameters of the forward power control in order to maintain the quality of the forward link (abstract).

The mobile station receives forward frames from a base station and periodically sends to the base station a power measurement report (PMRM) regarding the forward frames (col. 5, lines 11-37; i.e., null frames). When the mobile station does not receive a forward signal (i.e., forward/null frames) the mobile station is unable to transmit the PMRM to the base station, and

when the base station does not receive any PMRM from the mobile station within a predetermined period, then the base station changes its parameter to increase the digital gain to increase the transmission power so that the mobile station can receive the forward frames (i.e., adjusting power of frames transmitted by the base station) and transmit the PMRM. Therefore, as a result of improving the quality of the forward link by the increase in the digital gain and consequently transmission power, the mobile station is able to receive two forward frames consecutively and restart transmission of the PMRM (col. 6, lines 26-49).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the prior art to provide a base station with a transmit power controller capable of adjusting a power level of frames transmitted by said base station, as suggested by Kim, in order to improve or maintain the quality of the forward link (i.e., forward or null frames) so that the mobile station is able to receive two good frames consecutively from the base station (col. 6, lines 29-36, 45-49) and start transmission of the preamble frames.

Regarding claim 8, the combination of Applicant's description of prior art and Kim disclose the wireless network as set forth in Claim 7, Kim discloses wherein said preamble frame detector of said base station is capable of detecting at least one missing preamble frame from said mobile station; and wherein in response to said detection of said at least one missing preamble frame from said mobile station, said transmit power controller increases a power level of null frames transmitted by said base station (col. 5, lines 11-37; col. 6, lines 26-49; the base station receives the PMRMs from the mobile station (fairly characterized as preamble frames since the MS transmit them in response to the reception of forward/null frames transmitted by the BS) and when it detect the failure of the reception of a PMRM within a predetermined time

(i.e., missing preamble), the base station changes its parameters to increase the digital gain to increase the transmission power of the forward frames so that the mobile station can receive the forward frames).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the prior art to include in the base station the features of wherein the preamble frame detector of said base station is capable of detecting at least one missing preamble frame from said mobile station; and wherein in response to said detection of said at least one missing preamble frame from said mobile station, said transmit power controller increases a power level of null frames transmitted by said base station, as suggested by Kim, in order to improve the quality of the forward link (i.e., forward or null frames) so that the mobile station is able to receive two good frames consecutively from the base station (col. 6, lines 29-36, 45-49) and start transmission of the preamble frames.

Regarding claim 9, the combination of Applicant's description of the prior art and Kim disclose, the wireless network as set forth in Claim 8, Kim discloses wherein said transmit power controller increases said power level of null frames by a step size having a configurable value (col. 6, lines 29-36; the transmission power is increased by a "second big up delta").

Regarding claim 13, For use in a wireless network, Applicant's description of the Prior Art, discloses a method of operating a base station during a call set-up procedure, the method comprising the steps of:

transmitting null frames from said base station to a mobile station during the call set-up procedure; during the call set-up procedure, detecting in a preamble frame detector of said base station preamble frames from said mobile station (Fig. 3; page 17, paragraph [0043] of the

specification; during call set up the Base Station 101 sends a series of null frames to the mobile station 111 on a first frequency channel and after the mobile station receives two good null frames the mobile station starts sending preamble frames which the Base Station receives or detects, the transmissions of the null and preamble frames between the Base Station and mobile station occurs simultaneously).

But, Applicant's Admission of the Prior Art fails to particularly disclose wherein the method comprising the step of adjusting a power level of said null frames transmitted to said mobile station by said base station.

However, adjusting the power level of frames transmitted by a base station is well known in the art and Kim is evidence of the fact. Kim, in an analogous field of invention, teaches a method of forward power control in a cellular mobile telecommunication system having a base station and a mobile station in which the base station changes its parameters of the forward power control in order to maintain the quality of the forward link (abstract).

The mobile station receives forward frames from a base station and periodically sends to the base station a power measurement report (PMRM) regarding the forward frames (col. 5, lines 11-37; i.e., null frames). When the mobile station does not receive a forward signal (i.e., forward/null frames) the mobile station is unable to transmit the PMRM to the base station, and when the base station does not receive any PMRM from the mobile station within a predetermined period, then the base station changes its parameter to increase the digital gain to increase the transmission power so that the mobile station can receive the forward frames (i.e., adjusting power of frames transmitted by the base station) and transmit the PMRM. Therefore, as a result of improving the quality of the forward link by the increase in the digital gain and

consequently transmission power, the mobile station is able to receive two forward frames consecutively and restart transmission of the PMRM (col. 6, lines 26-49).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the prior art to include the step of adjusting a power level of the frames transmitted by said base station to a mobile station, as suggested by Kim, in order to improve or maintain the quality of the forward link (i.e., forward or null frames) so that the mobile station is able to receive two good frames consecutively from the base station (col. 6, lines 29-36, 45-49) and start transmission of the preamble frames.

Regarding claim 14, the combination of Applicant's description of prior art and Kim disclose the method as set forth in Claim 13, Kim discloses further comprising the steps of detecting at least one missing preamble frame from said mobile station; and in response to said detection of said at least one missing preamble frame from said mobile station, increasing a power level of null frames transmitted by said base station (col. 5, lines 11-37; col. 6, lines 26-49; the base station receives the PMRMs from the mobile station (fairly characterized as preamble frames since the MS transmit them in response to the reception of forward/null frames transmitted by the BS) and when it detect the failure of the reception of a PMRM within a predetermined time (i.e., missing preamble), the base station changes its parameters to increase the digital gain to increase the transmission power of the forward frames so that the mobile station can receive the forward frames).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the prior art call set-up procedure to incorporate the steps of detecting at least one missing preamble frame from said mobile station; and in response to said

detection of said at least one missing preamble frame from said mobile station, increasing a power level of null frames transmitted by said base station, as suggested by Kim, in order to improve the quality of the forward link (i.e., forward or null frames) so that the mobile station is able to receive two good frames consecutively from the base station (col. 6, lines 29-36, 45-49) and start transmission of the preamble frames.

Regarding claim 15, the combination of Applicant's description of the prior art and Kim disclose, the method as set forth in Claim 15, Kim discloses wherein said power level of said null frames is increased by a step size having a configurable value (col. 6, lines 29-36; the transmission power is increased by a "second big up delta").

3. **Claims 4, 5, 10, 11, 16, and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art in view of KIM et al., and further in view of BROOKS et al. (US 2002/0090947A1).

Regarding claim 4, the combination of Applicant's description of the prior art and Kim disclose the base station as set forth in claim 2, but does not particularly disclose wherein said base station further comprises: a fade timer having a configurable value; wherein said base station starts said fade timer when said preamble frame detector detects at least one missing preamble frame from said mobile station; and wherein said base station stops sending said null frames to said mobile station when said preamble frame detector detects at least one missing preamble frame from said mobile station.

However, Brooks teaches in paragraph 0023, a base station that monitors the reverse link for reverse traffic channels frames (i.e., preamble) and detects a drop call when it does not receive reverse traffic channels frames for a period of time, typically 5 seconds (i.e., fade timer),

which makes the base station to end the transmission on the forward traffic channel (i.e., null frames).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the base station to include the features of comprising a fade timer having a configurable value; wherein said base station starts said fade timer when said preamble frame detector detects at least one missing frame from said mobile station, and wherein the base station stops sending said null frames to said mobile stations when said preamble frame detects at least one missing frame from said mobile station, as suggested by Brooks, because it is well known in the art for a base station to comprise a fade timer for detecting a drop call in order to free up communication resources of the base station when a connection is in bad condition as detected by the loss of the reverse link.

Regarding claim 5, the combination of Applicant's description of the prior art, Kim, and Brooks disclose the base station as set forth in Claim 4, Brooks discloses wherein said base station releases said call between said base station and said mobile station when one of: said fade timer expires and a maximum power level for said null frames is exceeded (p.0023; the base station drops the call when it does not receive the reverse traffic channel frames for a period of time, i.e., fade timer).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the base station to include the features of releasing said call between said base station and said mobile station when one of: said fade timer expires and a maximum power level for said null frames is exceeded, as suggested by Brooks, because when

connections continue to deteriorate for an entire period of time of the fade timer, the connections are useless.

Regarding claim 10, the combination of Applicant's description of the prior art and Kim disclose the wireless network as set forth in Claim 8, but does not particularly disclose wherein said each base station further comprises: a fade timer having a configurable value; wherein said each base station starts said fade timer when said preamble frame detector detects at least one missing preamble frame from said mobile station; and wherein said each base station stops sending said null frames to said mobile station when said preamble frame detector detects at least one missing preamble frame from said mobile station.

However, Brooks teaches in paragraph 0023, a base station that monitors the reverse link for reverse traffic channels frames (i.e., preamble) and detects a drop call when it does not receive reverse traffic channels frames for a period of time, typically 5 seconds (i.e., fade timer), which makes the base station to end the transmission on the forward traffic channel (i.e., null frames).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the base station to include the features of comprising a fade timer having a configurable value; wherein said base station starts said fade timer when said preamble frame detector detects at least one missing frame from said mobile station, and wherein the base station stops sending said null frames to said mobile stations when said preamble frame detects at least one missing frame from said mobile station, as suggested by Brooks, because it is well known in the art for a base station to comprise a fade timer for detecting a drop call in order

to free up communication resources of the base station when a connection is in bad condition as detected by the loss of the reverse link.

Regarding claim 11, the combination of Applicant's description of the prior art, Kim, and Brooks disclose the wireless network as set forth in Claim 10, Brooks discloses wherein said each base station releases said call between said each base station and said mobile station when one of: said fade timer expires and a maximum power level for said null frames is exceeded (p.0023; the base station drops the call when it does not receive the reverse traffic channel frames for a period of time, i.e., fade timer).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, o modify the base station to include the features of releasing said call between said base station and said mobile station when one of: said fade timer expires and a maximum power level for said null frames is exceeded, as suggested by Brooks, because when connections continue to deteriorate for an entire period of time of the fade timer, the connections are useless.

Regarding claim 16, the combination of Applicant's description of the prior art and Kim disclose the method as set forth in Claim 14, but does not particularly disclose further comprising the steps of: providing in said base station a fade timer that has a configurable value; starting said fade timer when said preamble frame detector detects at least one missing preamble frame from said mobile station; and stopping a transmission of said null frames to said mobile station when said preamble frame detector detects at least one missing preamble frame from said mobile station.

However, Brooks teaches in paragraph 0023, a base station that monitors the reverse link for reverse traffic channels frames (i.e., preamble) and detects a drop call when it does not receive reverse traffic channels frames for a period of time, typically 5 seconds (i.e., fade timer), which makes the base station to end the transmission on the forward traffic channel (i.e., null frames).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the base station to include the features of comprising a fade timer having a configurable value; wherein said base station starts said fade timer when said preamble frame detector detects at least one missing frame from said mobile station, and wherein the base station stops sending said null frames to said mobile stations when said preamble frame detects at least one missing frame from said mobile station, as suggested by Brooks, because is its well known in the art for a base station to comprise a fade timer for detecting a drop call in order to free up communication resources of the base station when a connection is in bad condition as detected by the loss of the reverse link.

Regarding claim 17, the combination of Applicant's description of the prior art, Kim, and Brooks disclose the method as set forth in claim 16, Brooks discloses further comprising the step of: releasing a call between said base station and said mobile station when one of: said fade timer expires and a maximum power level for said null frames is exceeded (p.0023; the base station drops the call when it does not receive the reverse traffic channel frames for a period of time, i.e., fade timer).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to include the step of wherein the base station releases said call between said base station and said mobile station when one of: said fade timer expires and a maximum power level for said null frames is exceeded, as suggested by Brooks, because when connections continue to deteriorate for the entire period of time of the fade timer, the connections are useless.

4. **Claims 6, 12, and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art, in views of KIM et al. and BROOKS et al., and further in view of CHUN et al. (US 2002/0068586 A1).

Regarding claim 6, the combination of Applicant's description of the prior art, Kim, and Brooks disclose the base station as set forth in claim 4, but does not particularly disclose wherein said configurable value of said fade timer is less than five seconds.

However, Chun teaches that a fade timer can range from 0 to 10 seconds depending on a system operation state, and in his invention is preferably set to 1.2 seconds which is a shorter time than the typical 5 seconds for releasing a call in the prior art (p.0070).

Therefore, it would have been obvious matter of design choice to a person having ordinary skill in the art, to configure said fade timer to a value of less than five seconds, as suggested by Chun, because this value varies depending on the operation of the system and subscriber characteristics.

Regarding claim 12, the combination of Applicant's description of the prior art, Kim, and Brooks disclose the wireless network as set forth in claim 10, but does not particularly disclose wherein said configurable value of said fade timer is less than five seconds.

However, Chun teaches that a fade timer can range from 0 to 10 seconds depending on a system operation state, and in his invention is preferably set to 1.2 seconds which is a shorter time than the typical 5 seconds for releasing a call in the prior art (p.0070).

Therefore, it would have been obvious matter of design choice to a person having ordinary skill in the art, to configure said fade timer to a value of less than five seconds, as suggested by Chun, because this value varies depending on the operation of the system and subscriber characteristics.

Regarding claim 18, the combination of Applicant's description of the prior art, Kim, and Brooks disclose the method as set forth in claim 16, but does not particularly disclose wherein said configurable value of said fade timer is less than five seconds.

However, Chun teaches that a fade timer can range from 0 to 10 seconds depending on a system operation state, and in his invention is preferably set to 1.2 seconds which is a shorter time than the typical 5 seconds for releasing a call in the prior art (p.0070).

Therefore, it would have been obvious matter of design choice to a person having ordinary skill in the art, to configure said fade timer to a value of less than five seconds, as suggested by Chun, because this value varies depending on the operation of the system and subscriber characteristics.

5. **Claims 19-21, and 25-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art in view of RAAF et al. (US 2004/0029604 A1).

Regarding claims 19, For use in a wireless network, Applicants' description of the prior art, discloses a mobile station capable of releasing a call between said mobile station and a base station during a call set-up procedure, said mobile station comprising:

a main processor; a null frame monitor program capable of detecting null frames transmitted to said mobile station by said base station during said call set-up procedure; and a transmit program for transmitting preamble frames during said call set-up procedure (Fig. 3; page 17, paragraph [0043] of the specification; during call set up the Base Station 101 sends a series of null frames which are received by the mobile station 111, the mobile station sends preamble frames in response to the null frames).

But, the Applicant's description of the prior does not particularly disclose wherein the mobile station comprises a transmit power control program capable of adjusting a power level of preamble frames transmitted by said mobile station.

However, these features are well known in the art and Raaf is evidence of the fact. Raaf teaches a method for a mobile station to gradually increase the power (i.e., power adjustment) that is used to send a preamble. Furthermore teaches that at the initiation of a communication between a base station and a mobile station begins with an estimation of the initial power of a preamble to be transmitted by the mobile station, after that, the power of the preamble is gradually increased (power ramping) until a base station receives or detects the preamble and sends a corresponding acknowledgement message (note that this is fairly characterized as null frames) to the mobile station and the latter receives or detects the acknowledgement message (Abstract; paragraphs [0033]-[0041]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the prior art to incorporate in the mobile station a transmit power control program capable of adjusting a power level of preamble frames transmitted by said mobile station, as suggested by Raaf, in order for the preamble frames to be transmitted at an adequate power level so that the base station is able to receive the preambles and acknowledge their reception.

Regarding claim 25, For use in a wireless network, Applicants' description of the prior art, discloses a method of operating a mobile station during a call set-up procedure, the method comprising the steps of:

transmitting preamble frames from said mobile station to a base station during the call set-up procedure; during the call set-up procedure, detecting in a null frame monitor program of said mobile station null frames from said base station (Fig. 3; page 17, paragraph [0043] of the specification; during call set up the Base Station 101 sends a series of null frames which are received by the mobile station 111, the mobile station sends preamble frames in response to the null frames).

But, the Applicant's description of the prior does not particularly disclose the step of adjusting a power level of said preamble frames transmitted to said base station by said mobile station.

However, these features are well known in the art and Raaf is evidence of the fact. Raaf teaches a method for a mobile station to gradually increase the power (i.e., power adjustment) that is used to send a preamble. Furthermore teaches that at the initiation of a communication between a base station and a mobile station begins with an estimation of the initial power of a

preamble to be transmitted by the mobile station, after that, the power of the preamble is gradually increased (power ramping) until a base station receives or detects the preamble and sends a corresponding acknowledgement message (note that this is fairly characterized as null frames) to the mobile station and the latter receives or detects the acknowledgement message (Abstract; paragraphs [0033]-[0041]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the prior art to comprise the step of adjusting a power level of preamble frames transmitted by said mobile station, as suggested by Raaf, in order for the preamble frames to be transmitted at an adequate power level so that the base station is able to receive the preambles and acknowledge their reception.

Regarding claims 20 and 26, the combination of Applicant's description of the prior art and Raaf disclose the mobile station and method as set forth in Claims 19 and 25, Raaf discloses wherein said null frame monitor program of said mobile station is capable of detecting at least one missing null frame from said base station; and wherein in response to said detection of said at least one missing null frame from said base station, said transmit power control program increases a power level of preamble frames transmitted by said mobile station (paragraphs [0034]-[0041]; the mobile station waits for the reception of an acknowledgement message (i.e., fairly characterized as null frames) for a particular period of time and if no acknowledgement is received within the period of time (i.e., missing null frame), the ideal power is recalculated by incrementing the last ideal power by a power ramp step and sending the preamble frames with the new recalculated ideal power).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the prior art to incorporate in the mobile station a null frame monitor program capable of detecting at least one missing null frame from said base station; and wherein in response to said detection of said at least one missing null frame from said base station, said transmit power control program increases a power level of preamble frames transmitted by said mobile station, as suggested by Raaf, in order for the preamble frames to be transmitted at an adequate power level so that the base station is able to receive the preambles and acknowledge their reception.

Regarding claims 21 and 27, the combination of Applicant's description of the prior art and Raaf disclose the mobile station and method as set forth in Claims 20 and 26, Raaf discloses wherein said transmit power control program increases said power level of said preamble frames by a step size having a configurable value (paragraphs [0039]-[0041]).

6. **Claims 22, 23, 28, and 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art in view of RAAF et al., and further in view of BROOKS et al.

Regarding claims 22 and 28, the combination of Applicant's description of the prior art and Raff disclose the mobile station and method as set forth in Claims 20 and 26, Raaf discloses wherein said mobile station increases power to said preamble frames in relation to a detected number of missing null frames when said null frame monitor program detects missing null frames from said base station (paragraphs [0034]-[0041]; the mobile station waits for the reception of an acknowledgement message (i.e., fairly characterized as null frames) for a particular period of time and if no acknowledgement is received within the period of time (i.e.,

missing null frame), the ideal power is recalculated by incrementing the last ideal power by a power ramp step and send the preamble with the new recalculated ideal power).

But, the combination of Applicant's description of the prior art and Raaf fails to particularly disclose wherein the mobile station comprises a fade timer having a configurable value; wherein said mobile station starts said fade timer when said null frame monitor program detects at least one missing null frame from said base station.

However, Brooks teaches a mobile station detect a dropped call due to the loss of the forward traffic channel when the mobile station is unable to receive a usable forward traffic channel for a period of time of typically 5 seconds (i.e., fade timer) (paragraph [0022]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the mobile station to include the features of comprising a fade timer having a configurable value; wherein said mobile station starts said fade timer when said preamble frame detector detects at least one missing frame from said base station (i.e., loss of traffic channel), as suggested by Brooks, because it is well known in the art for a mobile station to comprise a fade timer for detecting the loss of a communication service.

Regarding claims 23 and 29, the combination of Applicant's description of the prior art, Raaf, and Brooks disclose the mobile station and method as set forth in Claim 22 and 28, Brooks discloses wherein said mobile station releases said call between said mobile station and said base station when one of: said fade timer expires and a maximum power level for said preamble frames is exceeded (paragraph [0022]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to include the feature of wherein the mobile station releases said call between said base station and said mobile station when one of: said fade timer expires and a maximum power level for said preamble frames is exceeded, as suggested by Brooks, because it is well known in the art that when mobile station is unable to receive a usable traffic channel for the entire period of time of the fade timer, the connection is terminated or released.

7. **Claims 24 and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art in views of RAAF et al. and BROOKS et al., and further in view of Chun et al.

Regarding claims 24 and 30, of Applicant's description of the prior art, Raaf, and Brooks disclose the mobile station and method as set forth in claims 22 and 28, but fails to particularly disclose wherein said configurable value of said fade time is less than five seconds.

However, Chun teaches that a fade timer can range from 0 to 10 seconds depending on a system operation state, and in his invention is preferably set to 1.2 seconds which is a shorter time than the typical 5 seconds for releasing a call in the prior art (p.0070).

Therefore, it would have been obvious matter of design choice to a person having ordinary skill in the art, to configure said fade timer to a value of less than five seconds, as suggested by Chun, because this value varies depending on the operation of the system and subscriber characteristics.

(10) Response to Arguments

(a) Appellant's arguments with respect to the rejections of claims 1-3 and 7-9 under 35 U.S.C. 103(a) as being unpatentable over "Applicant's Admitted Prior Art" ("APA") in view of KIM et al. (6,418,322) have been fully considered, but they area not deemed to be persuasive for at least the following reasons.

With respect to claims 1 and 7, the Appellant argues that claims 1 and 7 require a transmit power controller capable of adjusting a power level of null frames transmitted by said base station during the call-set up procedure, and argues that the Examiner concedes that this is not taught by APA and further argues that this is also not disclosed or suggested by Kim, since nothing in KIM discusses any capability to do so during the call set-up procedure, as claimed, and that Kim's system requires that the call already be established before any power control takes place (see Arguments, pages 14-17).

The Examiner respectfully disagrees. The claim requires a base station comprising a transmit power controller "capable of" adjusting a power of null frames transmitted by the base station during the call set-up procedure. However, the recitation that the transmit power controller is "capable of" performing a function is not a positive limitation and only requires the ability to so perform (see MPEP § 2106 and MPEP § 2111.04). Kim (in column 6, lines 5-48) teaches a base station comprising a transmit power controller that adjusts the power of forward frames (i.e., null frames) transmitted to a mobile station, and while the Appellant argues that in Kim's system the call is already established, the base station would be "capable of" adjusting the power of the forward frames at any other point in time. Therefore, Kim clearly demonstrates the

capability of adjusting the power of the null frames during the call set up procedure or any other point during a call.

With respect to claims 2-3 and 8-9, the Appellant argues that "nothing in Kim teaches or suggests that PMRM are preamble frames or their equivalents, and nothing in Kim teaches that they are transmitted in response to the reception of null frames" (see Arguments, pages 17-18); the Examiner respectfully disagrees.

The power measurement report messages (PMRM) are transmitted by the mobile station to the base station in response to the reception of forward frames transmitted by a base station. The forward frames in Kim are a fair characterization of the claimed "null frames" and therefore, the PMRM are a fair characterization of the "preamble frames" transmitted by the mobile station in response to the reception of "null frames".

(b) Appellant's arguments with respect to the rejections of claims 4, 5, 6, 10, 11, and 12 under 35 U.S.C. 103(a) as being unpatentable over "Applicant's Admitted Prior Art" ("APA") in view of KIM et al. (6,418,322), and any other combinations with BROOKS et al. (2002/0090947) and CHUN (2002/0068586).

With respect to claims 4, 5, 6, 10, 11, and 12, the Appellant argues that "the limitations of the respective parent claims, and related arguments above, apply here as well...the limitations of these claims are not taught or suggested by any combination of the art in combination with the limitations of the parent claims, including in particular the limitations argued above with respect to power control functions during call setup" (see Arguments, pages 19-20).

The alleged deficiencies have been addressed above. The references of Brooks and Chun are used in combination with "Applicant's admitted prior art" and Kim to address dependent subject matter.

(c) Appellant's arguments with respect to the rejections of claims 19-21 and 25-27 under 35 U.S.C. 103(a) as being unpatentable over "Applicant's Admitted Prior Art" ("APA") in view of RAAF et al. (US 2004/0029604) have been fully considered, but they are not deemed to be persuasive for at least the following reasons.

Appellant argues (pages 21-22 of Appellant's Appeal Brief) that claims 19 and 25 each require that the power level of preamble frames transmitted by the mobile station is increased in response to the detection of at least one missing null frame from the base station and Raaf teaches in paragraph 0037 that power can be increased when there is "no reception of an acknowledgement message", according to the Appellant, this statement does not teach or suggest that this can or should be done in response to the detection of at least one missing null frame from the base station, and that nothing in Raaf teaches or suggests that a null frame can or should be used as the described "acknowledgement message".

The Examiner respectfully disagrees. The "null frames" are transmissions from a base station to a mobile station during a call set up procedure as also are the "acknowledgement messages" disclosed in Raaf's system. Therefore, Raaf's system does not distinguish from the claimed invention, the base station in Raaf's system operates in the same manner because the mobile station in response to a missing transmission (i.e., null frames or acknowledgement

messages) from the base station, increases the power of its preamble frames (paragraphs [0033] and [0039]-[0041]).

The Appellant also argues (page 22 of Appellant's Appeal Brief) that Raaf teaches away from increasing power when at least one "acknowledgement message" is not received because paragraph 0037 of Raaf teaches that in some situations it is appropriate to retransmit the preamble with the same low power.

The Examiner respectfully disagrees. "The prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004). (MPEP 2141.02)

Furthermore, the Examiner notes that claim 19 uses the language of "capable of" and it has been held that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

(d) Appellant's arguments with respect to the rejections of claims 22-24 and 28-30 under 35 U.S.C. 103(a) as being unpatentable over "Applicant's Admitted Prior Art" ("APA") in view of RAAF et al. (2004/0029604), and any other combinations with BROOKS et al. (2002/0090947) and CHUN (2002/0068586).

With respect to claims 22-24 and 28-30, the Appellant argues that "the limitations of the respective parent claims, and related arguments above, apply here as well...the limitations of these claims are not taught or suggested by any combination of the art in combination with the limitations of the parent claims, including in particular the limitations argued above with respect

to increasing the power level of preamble frames transmitted by the mobile station in response to the detection of at least one missing null frame from the base station" (see Arguments, pages 23-25).

The alleged deficiencies have been addressed above. The references of Brooks and Chun are used in combination with "Applicant's admitted prior art" and Kim to address dependent subject matter.

Furthermore, the Appellant argues that Brooks teaches away from the limitations of the independent claims because it also discusses "acknowledgement" messages, and indicates that these are clearly not null frames, but rather specific acknowledgements to other specific messages; the Examiner respectfully disagrees. Brooks (paragraph [0022] lines 1-16) teaches that the mobile station detects a dropped call when it detects the loss of the forward traffic channel (i.e., null frames from base station) and may also detect a dropped call by sending a message that requires an acknowledgement such as a pilot strength measurement message. However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004). (MPEP 2141.02)

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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